

Applicants : Michael Wayne Graham et al.
Serial No. : 10/821,726
Filed : April 8, 2004
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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-133. (Canceled)

134. (Currently amended) A process for ~~producing an RNA molecule which is capable of~~ delaying, repressing or otherwise reducing the expression of a target gene in a mammalian cell comprising introducing into a cell a double-stranded ~~synthetic gene~~ DNA construct consisting of a promoter operable in the cell, a transcription termination sequence active in the cell, and operably connected thereto

a first structural gene sequence comprising 20-30 consecutive nucleotides identical in sequence to a region of a target gene in the mammalian cell;

a second structural gene sequence comprising 20-30 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20-30 consecutive nucleotides of the first structural gene sequence, thereby providing a repeating sequence ~~of~~ which is only 20-30 consecutive nucleotides in length; and

~~optionally~~ a stuffer fragment which, ~~if present,~~ separates and links the first and second structural gene sequences,

~~wherein the a repeating sequence within the first and second structural gene sequences, and if present stuffer fragment, is only 20-30 nucleotides in length,~~ such that the ~~synthetic gene~~ double-stranded DNA construct is transcribed to produce the RNA molecule.

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135. (Previously presented) The process of claim 134, wherein the region of the target gene is in an exon.
136. (Previously presented) The process of claim 134, wherein the target gene is a viral gene.
137. (Previously presented) The process of claim 136, wherein the viral gene encodes a DNA polymerase, RNA polymerase, or viral coat protein.
138. (Previously presented) The process of claim 134, wherein the target gene is from a lentivirus.
139. (Previously presented) The process of claim 134, wherein the target gene is from an immunodeficiency virus.
140. (Previously presented) The process of claim 134, wherein the target gene is from a single-stranded (+) RNA virus.
141. (Previously presented) The process of claim 134, wherein the target gene is from a double-stranded DNA virus.
142. (Previously presented) The process of claim 134, wherein the target gene is a transgene in the mammalian cell.
143. (Previously presented) The process of claim 134, wherein the target gene is an endogenous gene in the mammalian cell.
144. (Previously presented) The process of claim 134, wherein the 20-30 consecutive nucleotides are identical to a coding region of the target gene.

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145. (Previously presented) The process of claim 134, wherein the 20-30 consecutive nucleotides are identical to a 5'- or 3'-untranslated sequence of the target gene.
146. (Currently Amended) The process of claim 134, ~~wherein the stuffer fragment is present,~~ wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence form an interrupted palindrome sequence, and wherein the ~~repeated~~ repeating sequence of the interrupted palindrome sequence is only 20-30 consecutive nucleotides in length.
147. (Previously presented) The process of claim 146, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.
148. (Previously presented) The process of claim 146, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.
149. (Previously presented) The process of claim 146, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.
150. (Previously presented) The process of claim 134, wherein the double-stranded synthetic gene is introduced by a virus particle.
151. (Previously presented) The process of claim 134, wherein the double-stranded synthetic gene is introduced by a liposome.

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152. (Previously presented) The process of claim 134, wherein the double-stranded synthetic gene is introduced by transfection.
153. (Previously presented) The process of claim 134, wherein the cell is the mammalian cell.
154. (Previously presented) The process of claim 134, wherein the double-stranded synthetic gene is integrated into the genome of the cell.

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155. (New) A process for ~~producing an RNA molecule which is capable of~~ delaying, repressing or otherwise reducing the expression of a target gene in a mammalian cell comprising introducing into a cell a double-stranded DNA construct consisting of a promoter operable in the cell, a transcription termination sequence active in the cell, and operably connected thereto

a first structural gene sequence comprising 20-30 consecutive nucleotides identical in sequence to a region of a viral DNA polymerase gene, a viral RNA polymerase gene, a viral coat protein gene, or a visually-detectable gene involved in determining an external phenotype in the mammalian cell;

a second structural gene sequence comprising 20-30 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20-30 consecutive nucleotides of the first structural gene sequence, thereby providing a repeating sequence ~~of~~ which is only 20-30 consecutive nucleotides in length; and

a stuffer fragment which separates and links the first and second structural gene sequences,

wherein a repeating sequence within the double-stranded DNA construct is only 20-30 nucleotides in length,

such that the double-stranded DNA construct is transcribed to produce the RNA molecule.